

C-A OPERATIONS PROCEDURES MANUAL

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Approved: Signature on File _____
 Collider-Accelerator Department Chairman Date

D. Beavis

9.1.2 Procedure for Preparing and Maintaining an RSC Check-Off List and Assuring that RSC Recommendations are Completed.

1. Purpose

- 1.1 To provide guidance to the Radiation Safety Committee (RSC) and [Liaison physicists](#) in the process of creating a check-off list for radiation safety items associated with a C-A facility or experiment. The check-off list requires designated personnel to verify that the required radiation safety items are in place prior to routine operation of a facility or experiment.
- 1.2 To provide instructions to the RSC Chair and the C-A Associate Chair for ESHQ on assuring that recommendations of the RSC are acted on to completion.
- 1.3 To provide instructions to the RSC Chair, Operations Coordinator (OC), C-A Facility Support (FS) Representative and Liaison physicists on how to control changes to the conditions specified on active check-off lists. Active check-off lists are those that are in the MCR RSC Check-Off List Binder.
- 1.4 RSC recommendations can be from the minutes of the RSC Meetings and memoranda to/from the RSC Chair, and are categorized into two classes:
 - 1.4.1 Check-off List Items Required to be completed before initial start-up of an area. Completion is to be verified on the area check off list.
 - 1.4.2 Action List Items

These recommendations are not required for start-up of a specific area and do not appear on area check off lists. They are usually long term improvements.

2. Responsibilities

- 2.1 A person (usually a [Liaison Physicist](#)) shall be designated by the RSC Chair to generate a check-off list for a facility or experiment.
- 2.2 The RSC Chair, or designated RSC representative, will review and sign the check-off list. The C-A Department Chair, or designee, approves the check-off list. The completed list will be given to the MCR and a copy maintained in the RSC files.
- 2.3 MCR operators will follow instructions on the check-off list to prevent radiation to the area until the required items on the check-off list are completed.
- 2.4 It is the responsibility of the RSC Chair to designate department personnel to track recommendations for the Collider-Accelerator Department (eg. [liaison physicist](#), [or liaison engineer](#), or MCR Operations Coordinator).

- 2.5 MCR shall maintain change control of active check-off lists. Changes shall be documented and approved prior to change implementation.

3. **Prerequisites**

- 3.1 Qualified and trained [RSC members](#), [liaison physicists](#) and MCR Operations Coordinators.
- 3.2 Check-off list items and action items are generated from a review of the radiation safety issues for an area. This review must be done prior to the initial operation for an area.
- 3.3 Changes to active check-off lists shall be approved prior to implementation.

4. **Precautions**

None

5. **Procedures**

- 5.1 Check-Off List Items: [designated by CK-facility accelerator - Experiment #, if applicable].
- 5.1.1 A designated responsible person (eg. [liaison physicist](#)) shall prepare the check-off list for the beam line or facility.
- 5.1.2 The designated responsible person must ensure that all area specific check list items for the area are included in the RSC Check-off List for verification of completion prior to allowing beam into the area. A listing of the [RSC Check-off items](#) is maintained on the web by the RSC Chair.
- 5.1.3 The designated responsible person must also include (as appropriate) generic items to the RSC Check-off List. Examples are given below;
- a) Title - signifies area, experiment, and running mode.b) Prepared - identifies who prepared the list and when.
 - b) Reviewed - identifies who and when reviewed.
 - c) The method to disable radiation from being introduced must be identified, e.g., a beam line disable switch key.
 - d) Downstream areas affected by the operation of this specific area must be listed and verified that they are in the appropriate safe state.

- e) Devices requiring established setpoints shall have the setpoints recorded. RSC LOTO should be done following [C-A-OPM 9.1.16](#).
- f) Functional check of interlocks.
- g) Radiation barriers and signs in place (the designated postings shall be coordinated with the FS Representative)
- h) Area classification(s).
- i) Radiation surveys or fault studies.
- j) Associated procedures prepared, reviewed and distributed.
- k) Required shielding and equipment in place.
- l) Radiation detectors - listed by type of device and location. The chipmunk maps, chipmunk viewer and the MCR Troubleshooting Guide shall be updated as necessary.

5.1.4 Each item is associated with the title of who is responsible for verifying its completion, e.g., [liaison physicist](#). A list should identify the people by title.

5.1.5 The check-off list will be reviewed by the RSC Chair, or designee, approved by the C-A Department Chair, or designee, and forwarded to the Head of Operations.

5.1.6 The liaison physicist for each area must verify the check-off list has been appropriately completed prior to routine operation and a copy forwarded to the C-A Associate Department Chair for ESHQ.

5.1.7 The "on-duty" Operations Coordinator must verify the check-off list has been appropriately completed before allowing beam into the area.

- Items which must be completed before any beam can be delivered.
- When beam line (area) can be run for tests.
- When beam line (area) can be run for routine operation.

5.1.8 All modifications to the original check-off list, during the implementation process, shall be reviewed and approved by [one member of the RSC](#) and the designated responsible person for that area, (dated and initialed on the check-off list next to the change).

- 5.1.9 Changes to completed, active check-off lists are made in accordance with section 5.3.
- 5.1.10 Completed (including previous year) RSC Check-off Lists will be maintained by the Head of Operations.
- 5.2 Action List Items: [designated ACT - sequentially in the Fiscal Year (ACT-01-00)].
 - 5.2.1 These items usually do not appear on a facility/experiment check-off list.
 - 5.2.2 The RSC Chair will assign a committee representative to track the item to its completion.
 - 5.2.3 The RSC Chair will maintain a list of action items.
 - 5.2.4 Non-completed action items will be reviewed periodically but at least annually by the RSC Chair for progress to completion.
- 5.3 Changes to active, completed check-off lists may be made as follows:
 - 5.3.1 The OC shall coordinate changes to check-off lists using the RSC Check-off List Change Control Form (C-A OPM-ATT 9.2.1.b).
 - 5.3.2 The initiator of the proposed change shall fill out the change control form. The form shall be given to the RSC Chair for approval and for designation of other approvals and a list of personnel who need to be informed of the approved changes.
 - 5.3.2.1 If the change involves an original check-off item (i.e., not a new item), the original check-off item on the checklist shall be lined out, dated and initialed by the RSC Chair to denote that the original verification is recinded. The note “See Change Control Form” or “See CCF” shall be placed next to the lined out item to link the change to a change control form.
 - 5.3.3 The RSC Chair shall clearly note on the change control form if the change causes prohibition or limitations of beam to the area controlled by the check-off list.
 - 5.3.4 Once issued, the OC shall coordinate obtaining approvals, informing designated individuals of the change and implementation of the change. Once implemented, the OC signs the change form to document change implementation.

- 5.3.5 The MCR shall comply with the new restrictions on beam operation (if applicable).
- 5.3.6 Restoration of the configuration to the original checklist requirements shall be documented in the same manner as described in sections 5.3.1 through 5.3.5. In this case, the changed configuration described in the change control form shall be lined out, dated and initialed by the RSC Chair and the restoration documented and controlled as a new change on a new change control form.
- 5.3.7 The change control form shall be permanently maintained as part of the original checklist.

6. Documentation

- 6.1 RSC minutes and memos.
- 6.2 Beam line (facility) check-off list.
- 6.3 Collider-Accelerator Department list of RSC action items.

7. References

None

8. Attachments

- 8.1 [C-A-OPM-ATT 9.1.2.a, "C-A Radiation Safety Committee Check-Off Items Master Index".](#)
- 8.2 [C-A OPM-ATT 9.1.2.b, "RSC Check-off List Change Control Form"](#)